Personal Processor Series

FX-1

USER'S GUIDE

A R T

APPLIED RESEARCH AND TECHNOLOGY

Introduction

Thank you for purchasing the FX-1—and congratulations: You now own one of the coolest and most sophisticated pieces of audio signal-processing available. Offering a superb level of processing and sound quality, the FX-1's specially designed integrated circuits and straightforward user interface quickly and easily gives you access to all of its features.

Features:

Two banks of 15 studio crafted presets.
30 effects algorithms including: reverb, delay, chorus, phase shifting, pitch shifting, tremolo, panning, multi-effect combinations, and true stereo effects.
Multi-effects processing offering up to three effects at once.
Dual Processing effects for processing each channel individually.
"More" options for each preset for more of the processing you need!
Adjustable input and output levels.
1/4" stereo inputs and outputs.
Portable design - Put it anywhere, take it anywhere.
Very low noise and wide dynamic range.
Designed & Manufactured in the USA.

Fill in the following information for your reference:
Date of purchase: _____
Purchased from: _____
Serial number: 121-_____

This is a great time to fill out the User Registration Card included with your FX-1 to become a completely informed A R T Artist. Completing and returning the card to us ensures you of becoming the first to know about exciting new A R T products as well as any further developments from A R T.

Connections:
Despite the FX-1's sophistication, it's easy to interface the unit with other equipment. All connections are made at the back of the FX-1. Standard 1/4" inputs and outputs make patching simple. Note: For best audio quality, always use high quality cables.

Input
The input is single-ended (unbalanced) with an impedance of 470k ohms.

NOTE: Because the FX-1 is designed for line-level or instrument operation, we don't recommended plugging microphones directly into it. This is because most microphones have a very low output and need to run into a mic preamp before anything. Use either a mic preamp (like the A R T Tube MP), a mixer, or an amp's preamp section to boost the level first (use the effects loop output, reverb send or channel insert from a mixer or amp). A higher signal level from a preamp or effects loop assures an optimum signal-to-noise ratio in the FX-1, keeping hiss and distortion to a minimum.

Output
The output is single-ended (unbalanced) with a source impedance of 1k ohm.

Power
Insert the supplied 9 Volt AC adapter's plug into the input labeled POWER on the FX-1's back panel. The FX-1 is powered by an external 9 Volt AC adapter. Always make sure that its output plug is securely plugged into the rear of the FX-1, and that the adapter is held firmly in an electrical outlet. Never operate the FX-1 or AC adapter in the rain or in wet locations. If the AC adapter's cord is ever cut or damaged, discontinue using it and replace the adapter with a new one. To prolong its life, unplug the adapter when the FX-1 is not in use. Refer to the label on the adapter or the specifications later in this manual for the appropriate operating voltages.

Controls, Switches and Indicators:

Mix

You can vary the mix of dry (unprocessed) and wet (processed) signals with this knob. When the Mix knob is set fully counterclockwise, no effect is present at the output. Turning the Mix control fully clockwise produces effected signal only. Use this control to set the desired effect level to your sound.

On and Clip LEDs

When power is applied to the FX-1, the On LED lights green. The Clip (Clp) LED serves as the signal clip indicator. If to much signal is applied to the FX-1, this LED lights red. If the LED is constantly lit, reduce the input level to the FX-1 or set the In Level switch to the normal (Out) position.

Input and Output Level switches

Input and Output level switches are provided for you to optimize the operating level of the FX-1 to your system. On initial set up, start with these switches in their Out position. As the panel reads, if you need more level either into or out of the FX-1 press the appropriate switch to its In position.

To optimize your levels, set the switches so your Effect signal level is the same as your Bypass level.

NOTE: When using the FX-1 in an effects loop of an amplifier, depending on the amplifier, you may have to set the input and output level switches in different positions to optimize your amplifier (i.e. your input switch may be set to the “more” (in) position and the output switch may be set to the normal (out) position or vice versa).

Preset Selector

Select which preset you want by turning the Preset Selector knob to the preset number. The number corresponds to the preset chart printed on the top panel of the FX-1.

Bank Select Switch
There are two banks of 15 presets in the FX-1. Bank A is selected when the bank select switch is in its Out position. Bank B is selected when the bank select switch is pressed In.

More Effects Switch
Pressing the More switch in any preset gives you an enhanced version of the preset. For example, if you've currently selected a hall reverb, pressing the More switch will increase the decay time, alter the predelay and alter the EQ characteristics of that reverb. The result is a completely new sound for you to work with. Use the More function for those times when the preset you've selected is "almost" what you need.

Bypass
Each bank of presets has one Bypass setting. To bypass the FX-1, simply select the BY option with the preset encoder.

Applications:
If using the FX-1 with a single (mono) input, connect the cable to the left input. The FX-1 will automatically send this signal to both processors and will produce a stereo image at the output.

With a mixer: Reverb Send and Return
Connect a cable between your mixer's send and the FX-1's left input. If using a stereo send, or two sends, connect the second send to the FX-1's right input. Connect the FX-1's left and right outputs to your mixer's returns. Set the FX-1's Mix control to Wet.

Input Channel Loop
Some mixers are designed to accommodate effects on each input channel via "channel inserts," or "patch points." These often consist of a single 1/4" phone jack acting as both send and return, requiring a dual-mono-to-TRS (tip/ring/sleeve) plug configuration. Check your mixer's owner's manual to determine which plug of the dual-mono-to-TRS cable acts as a send, and which acts as a return. Connect the insert send to the FX-1's left input and the FX-1's left output to the insert's return. Adjust the mix control for the

desired blend of dry and processed signal.

With an amplifier: Straight into an amp

When patching the FX-1 into a guitar (or other instrument) amplifier's input, plug the instrument into the FX-1's input. Connect a cable from the FX-1's output to the amp's input. Adjust the mix control for the desired blend of dry and processed signal.

In an effects loop

If you're patching the FX-1 into an amplifier's effects loop, use one cable between the amp's effects Send jack and the FX-1's Input. Run a second cable from the FX-1's Output to the amp's Effects Return jack. If the return is stereo, connect the FX-1's other output to the second Return jack. Set the FX-1's mix control to its midpoint to start. Set the Input/Output Inst/line switches to match the Bypass level. Use the Mix control to set the desired effect level.

Preset Descriptions:

Bank A:

01 - Hall Reverb - Bright hall with 2.5 sec decay
More option: Warm hall with 4.0 sec decay

02 - Chamber Reverb - Bright chamber with 1.8 sec. decay
More option: Warm chamber with 3.0 sec decay

03 - Plate Reverb - Dark plate with 1.4 sec. decay
More option: Bright plate with 2.5 sec decay

04 - Room Reverb - Dark room with .8 sec. decay
More option: Ambient room with 1.6sec decay

05 - Gate Reverb - Med. room size, 100ms gate
More option: Med. hall size, 200ms bright gate

06 - Reverse Reverb - 150ms reverse
More option: 200ms reverse

07 - Stereo Chorus - Slow, wide (67%) chorus
More option: Med., narrow (6%) chorus

08 - Stereo Flange - Slow, wide (85%) with 25% regen.
More option: Med., wide (67%) with 50% regen.

09 - Delay - 260ms delay, no regeneration
More option: 420ms delay with 15% regen.

10 - Dual Delay - 175 ms stereo delay
More option: 250ms stereo delay
11 - Doubling Delay - 55ms stereo doubling delay
More option: 70ms stereo doubling delay
12 - Pitch Shift - Octave down
More option: 5th up
13 - Tremolo - slow, med. depth
More option: med., deep depth
14 - Reverb & Panner - 1.0 sec room with slow panning
More option: 1.4 sec room with med panning
15 - Tremolo & Reverb - slow tremolo with 1.0 sec. room
More option: med. tremolo with 1.6 sec. room
16 - Bypass

Bank B:
01 - Reverb & Delay - 2.0 sec. dark hall with 70ms delay
More option: 1.2 sec. bright room with 180ms delay
02 - Flange & Delay - Slow flange with 250ms delay
More option: Med. flange with 420ms delay
03 - Chorus & Reverb - Slow chorus with 1.0 sec. room
More option: Med. chorus with 2.5 sec. hall
04 - Chorus & Delay - Slow chorus with 300ms delay
More option: **Med.** chorus with 420ms delay
05 - Reverb & Delay & Chorus - 80ms slap, .5s room, slow chorus
More option: 200ms delay, 1.0s room, med. chorus
06 - Reverb & Delay & Flange - 60ms slap, .8s room, slow flange
More option: 100ms delay, 1.2s room, med. flange

Dual Processing Algorithms:
07 - Left channel - Dual delay - 150ms delay
Right channel - Gate reverb - 100ms gated reverb
*More option:*Left channel - 300ms delay
Right channel - 200ms gated reverb
08 - Left channel - Chorus - Slow chorus
Right channel - Gate reverb - 150ms gated reverb
*More option:*Left channel - Med. chorus
Right channel - 200ms gated reverb

09 - Left channel - Flange - Slow flange
Right channel - Gate reverb - 100ms gated reverb
*More option:*Left channel - Med. flange
Right channel - 150ms gated reverb
10 - Left channel - Reverb & slap delay - 65ms delay & .8s room
Right channel - Flange - Slow flange
*More option:*Left channel - 80ms delay & .5s room
Right channel - Med. flange
11 - Left channel - Reverb & slap delay - 60ms delay & 1.0s room
Right channel - Chorus - Slow chorus
*More option:*Left channel - 75ms delay & .8s room
Right channel - Med. chorus
12 - Left channel - Reverb - 0.5 sec room
Right channel - Flange - Slow flange
*More option:*Left channel - 1.2 sec. room
Right channel - Med. flange
13 - Left channel - Reverb - 0.8 sec room
Right channel - Chorus - Med. chorus
*More option:*Left channel - 1.5 sec. room
Right channel - Slow chorus
14 - Dual room reverb - 0.4 sec. true stereo room reverb
More option: 0.8 sec. true stereo room reverb
15 - Dual plate reverb - 0.6 sec. true stereo plate reverb
More option: 1.0 sec. true stereo plate reverb
16 - Bypass

ART FX-1 Specifications

Dimensions	5.0"H X 5.5"W X 2.0"H
Weight	1.5 Lbs
Connections	Stereo In/Out 1/4" phone
Presets	30 (60 with "more" options)
Input impedance	470k ohms
Output impedance	1k ohm
Maximum input level	+6dBv Line, -4dBv Inst
Maximum output level	+6dBv Line, -4dBv Inst
Dynamic range	dry >100dB (20-20kHz) wet >90dB (20-20kHz)
Total harmonic distortion (THD)	dry <.01% @ 1kHz wet <.015% @ 1kHz
Power Requirements	9 Volts A.C. @ 250ma (typ)

ART retains a policy of constant product improvement. Therefore, specifications are subject to change without notice.

ART reserves the right to make changes in design or make additions to or improvements upon this product without any obligation to install the same on products previously manufactured.

Designed and manufactured in the United States of America.

Applied Research & Technology, Inc.
215 Tremont Street
Rochester, NY 14608
(716) 436-2720
(716) 436-3942 (FAX)

WARRANTY & SERVICE INFORMATION

LIMITED WARRANTY

Warranty service for this unit will be provided by Applied Research & Technology, Inc. in accordance with the following warrant statement.

Applied Research & Technology, Inc. (ART) warrants to the original purchaser that this product and the components thereof will be free from defects in workmanship and materials for a period of three years from the date of purchase. Applied Research & Technology, Inc. will, without charge, repair or replace, at its option, defective product or component parts upon prepaid delivery to the factory service department or authorized service center, accompanied by proof of purchase date in the form of a valid sales receipt.

EXCLUSIONS: This warranty does not apply in the event of misuse or abuse of the product or as a result of unauthorized alterations or repairs. This warranty is void if the serial number is altered, defaced, or removed.

ART reserves the right to make changes in design or make additions to or improvements upon this product without any obligation to install the same on products previously manufactured.

ART shall not be liable for any consequential damages, including without limitation damages resulting from loss of use. Some states do not allow limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific rights and you may also have other rights which vary from state to state.

For units purchased outside the United States, service will be provided by an authorized distributor of Applied Research & Technology, Inc.

Service

The following information is provided in the unlikely event that your unit requires service. Use this procedure to return units in the United States only. For service outside the United States, please contact your authorized A R T distributor.

1) Be sure that the unit is the cause of the problem. Check to make sure the unit has power supplied, all cables are connected correctly, and the cables themselves are in working condition.

2) If you find the unit to be at fault, write down a description of the problem, including how and when the problem occurs.

3) Call the factory for a Return Authorization (RA) number.

4) Pack the unit in its original carton or a reasonable substitute. The packing box is not recommended for a shipping carton. Put the packaged unit in another box for shipping. Print the RA number clearly under the address.

5) Include with your unit: a return shipping address (we cannot ship to a P.O. Box), a copy of your purchase receipt, a daytime phone number, and a description of the problem.

6) Ship the unit to:

APPLIED RESEARCH & TECHNOLOGY, INC.
215 TREMONT STREET
ROCHESTER, NY 14608
ATTN: REPAIR DEPARTMENT
RA # _____

7) Contact our customer service department at (716) 436-2720 for your Return Authorization number or questions regarding repairs. Customer Service hours are 9:00 AM to 4:00 PM Eastern Time, Monday through Friday.

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FX-1
Personal Stereo Digital
Effects Processor

121-5004-101